

Applicant submits that the Section 112(1) rejection is improper and should be removed because the Examiner used the wrong test in sustaining the rejection. Specifically, “the parameters of a section 112 inquiry are set by the claims” and “[u]nclaimed subject matter is not subject to the disclosure [test] requirements of § 112.” See Zygo Corp. v. Wyko Corp., 79 F.3d 1563, 1567 (Fed. Cir. 1996) (emphasis in original). In the instant Application, the limitations referred to in the rejection include “how an interference profile is generated” and “how the reflected and nonreflected beams are combined,” as indicated on page 4 of the Final Office Action. However, none of these limitations are claimed, nor are these limitations necessary to practice the present invention. Furthermore, the Examiner has not asserted that the claimed limitations lack disclosure in the Specification; instead, the Examiner refers to a variety of unclaimed elements in making the rejection. Therefore, the Examiner has used the wrong test in asserting the Section 112(1) rejection, and the rejection should be removed.

Applicant further traverses the Section 112(1) rejection because the specification clearly describes a variety of example embodiments in a manner consistent with Section 112(1), the description including subject matter related to that which the Examiner refers in making the rejection. For instance, as discussed in the previous Office Action response, one example approach for defect detection involves detecting an optical signal having a time/wavelength differential that is different from the time/wavelength differential from a surface in the reference die. This approach may involve creating an interference profile as described in the specification and the cited references therein. However, simply stated, defect detection can be achieved by comparing the time/wavelength differential of light reflected from a defective die with a reference (e.g., light reflected from a non-defective die). This approach is discussed, for example, in connection with FIG. 2 and on page 10, line 12 through page 11, line 14. In this regard, the Examiner’s remarks on page 7 of the Final Office Action are contrary to the plain language of the specification. Specifically, FIG. 2 and the above-referenced discussion clearly explain an example application of differential detection with light entering the back side of the device using a “surface 231 under evaluation within the die” (see page 10, lines 17-18 of the specification). The surface 231 in FIG. 2 is clearly in the die, with light entering the die and reflecting off of the surface. Furthermore, in response to the

Examiner's assertion that the "Applicant never claims or discloses how the defects are detected" and that "only a general statement of dual-differential detection is made," Applicant again points to the cited portions of the specification as discussed above for a specific statement regarding an implementation for detecting defects. Therefore, Applicant submits that the Specification meets the requirements of Section 112(1) and requests that the rejection be removed.

Applicant respectfully traverses the Section 112(2) rejection because the cited portion of the M.P.E.P. (§2173.05(l)) appears not to exist. A search of the Eighth edition of the M.P.E.P., as available at the USPTO's web site, does not show §2173.05(l). Consistent with 35 U.S.C. §132, Applicant requests clarification and an opportunity to respond thereto.

Applicant further submits that the Section 112(2) rejection is improper and should be removed because the Examiner based the rejection on an incorrect assertion, and because the claimed limitations are definite, as consistent with the requirements of Section 112(2). Specifically, the Examiner appears to be incorrectly asserting that light never reaches a defective surface and that a step of illuminating the defects is missing. For instance, the claimed limitations include light directed "into the back side of the semiconductor die," with a defect at a surface in the die being detected using a beam reflected therefrom (see claim 1 and surface 231 in FIG. 2). Therefore, the assertion that light never reaches a defective surface is incorrect. In specific regard to claims 10-16, Applicant submits that the Examiner has incorrectly asserted that the claims do not include "means, structure, or element" that "illuminates or receives light reflected by the defects." For instance, in claim 10, the claimed "laser means" directs light into the back side of the die, and the "means for analyzing" can receive and analyze the reflected light. Therefore, the assertion that these elements are missing is incorrect. Furthermore, as indicated by MPEP §2173.02, the definiteness of claim language must be analyzed, not in a vacuum, but in light of the content of the particular application disclosure. In this regard, when analyzed in the context of the examples in the Specification, the claim language clearly meets the definiteness requirement of Section 112. Therefore, Applicant submits that the Examiner's assertion that these elements are missing is improper and requests that the Section 112(2) rejection be removed.

Applicant respectfully traverses the Section 103(a) rejection in view of the '838 reference because the Office Action failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met, as indicated in the M.P.E.P. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. In this instance, the Office Action failed to meet all of the criteria for establishing such a Section 103(a) rejection, as discussed below.

Applicant submits that the cited portions of the reference fail to teach or suggest all of the claimed limitations of the present invention. For example, as acknowledged by the Examiner on page 6 of the Final Office Action, the '838 reference does not teach or suggest limitations including defect detection and/or thinning of a semiconductor die. In a hindsight attempt to arrive at the presently-claimed invention, the Office Action purports that using the '838 reference for defect detection would have been obvious, and that thinning the back side is well-known in the art and obvious to use in connection with the teachings of the '838 reference. However, no teaching or suggestion supporting these assertions was provided. Moreover, a variety of other claimed limitations are not discussed whatsoever in the Office Action. For example, independent claims 1, 10, and 11 are directed to subject matter that includes "comparing a relational factor that is a function of the two beams of light with a reference and detecting therefrom a surface defect in the die." Claim 2 is directed to subject matter that includes using a nondefective semiconductor die to obtain the reference used in claim 1. Claim 3 is directed to subject matter that includes comparing a relational factor that "is a function of a time differential, or intensity." The Office Action has not provided a reference that teaches or suggests these limitations. In this regard, the Office Action failed to meet the Section 103(a) requirement that the cited reference(s) teach or suggest all the claim limitations; therefore, the Office Action failed to establish a *prima facie* case of obviousness, and Applicant requests that the rejection be removed.

Applicant further submits that the Office Action failed to cite any evidence of motivation found in the prior art for making the asserted modifications of the '838 reference. Relevant case law indicates that, without such evidence of motivation, the Section 103(a) rejection should be removed (*see, e.g., In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999)). In this instance, the Office Action failed to cite evidence of motivation for using the '838 reference in connection with defect detection in a semiconductor die, as claimed in the instant invention, or for modifying the reference to achieve the claimed limitations. For instance, in the Response to Arguments section of the Final Office Action, the Examiner asserts that "the skilled artisan when detecting height defects would look to Marx to measure the surface profile." However, no evidence has been cited in support of this assertion. In addition, while the Examiner also asserts that thinning the die is "well known in the art," Applicant submits that no motivation for thinning in connection with the '838 reference has been provided. Furthermore, in regard to the various claimed limitations that the Examiner has ignored in making the Section 103(a) rejection, as discussed above, no motivation for accordingly modifying the '838 reference has been provided. In view of the above, Applicant submits that the Office Action also failed to meet the motivation requirement for maintaining the Section 103(a) rejection; therefore, the Office Action failed to establish a *prima facie* case of obviousness and Applicant requests that the rejection be removed.

Applicant further traverses the Section 112 and Section 103(a) rejections because the Examiner failed to address the Applicant's arguments as indicated in M.P.E.P. §707.07(f) and as consistent with 35 U.S.C. §132. In specific regard to the Section 112 rejections, Applicant has repeatedly pointed the Examiner to portions of the specification describing example implementations of the various claimed limitations in a manner consistent with the Section 112(1) and Section 112(2) requirements. However, the Examiner has not directly addressed all of these cited portions of the specification in maintaining the Section 112 rejections. In specific regard to the Section 103(a) rejection, the Examiner has failed to address Applicant's argument regarding the lack of motivation to make the asserted modification of the '838 reference, or to show correspondence between the cited reference(s) and the claimed limitations. Therefore,


the Examiner has failed to answer the substance of Applicant's traversal, and Applicant requests that the rejections be removed.

In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is encouraged to contact the undersigned at (651) 686-6633.

Respectfully submitted,

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